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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,225	07/06/2005	Archie W. Garner	13015/38719BUS	7214
4743 7590 08/10/2007 MARSHALL, GERSTEIN & BORUN LLP 233 S. WACKER DRIVE, SUITE 6300 SEARS TOWER CHICAGO, IL 60606			EXAMINER GILLESPIE, BENJAMIN	
			ART UNIT 1711	PAPER NUMBER
			MAIL DATE 08/10/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/521,225

Applicant(s)

GARNER ET AL.

Examiner

Benjamin J. Gillespie

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

1. Claims 22-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The language "such that free isocyanate groups are present at less than 0.3%" render the claims indefinite because firstly, it is not clear what the isocyanate content is based on, i.e. weight percent, equivalent percent. Secondly, the percentage has no relative basis, i.e. weight of the entire polymer, just urethane linkages, etc.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over McBain et al ('053) in view of Bristowe et al ('837). McBain et al teach a gel coat composition comprising a urethane gel coat resin having terminal acrylate groups. The urethane resin is the reaction product of hydroxyl-terminated oligoester, polyisocyanate and hydroxyalkyl (meth)acrylate (Abstract; col 7 lines 1, 26-30; and col 10 lines 24-26). In particular, the oligoester is the reaction product of hexanediol, neopentyl glycol and adipic acid, and has a molecular weight between 1,500 and 2,500 (Col 2 lines 37, 44-59). The polyisocyanate preferably consists of

isophorone diisocyanate, and the hydroxyalkyl (meth)acrylate consists of hydroxyethyl acrylate (Col 3 lines 4, 7, and 9). The oligoester, diisocyanate, and hydroxyethyl acrylate is further disclosed to exist in molar amounts consisting of 1:2:2 respectively (Col 2 lines 65-67; col 3 lines 1-7). The structure of claim 2 would inherently be possessed by the polyurethane disclosed by McBain et al based on the shared stoichiometry and the reactive nature of OH and NCO functional groups.

3. Patentees go on to disclose the gel coat composition contains, in addition to the resin, other ingredients comprising free radical initiators, which are utilized in polymerization, and pigments. The gel resin is co-present with these components in an amount of 33% by weight of the total composition (Col 4 lines 56, 59-61; col 5 lines 12-16; col 7 lines 60-66; col 8 lines 1-18). Finally, McBain et al teach the gel coating composition to prepare exterior automotive body panels, which is then cured (Col 7 lines 16-20). However, McBain et al fail to teach a method of production wherein the oligoester is combined with the hydroxyalkyl (meth)acrylate before the addition of diisocyanate.

4. Bristowe et al teach an acrylate-terminated urethane coating composition comprising oligoester, isophorone diisocyanate, and hydroxyethyl acrylate (Abstract; col 2 lines 1-9, 35-36; col 4 lines 42; and col 5 line 35). Bristowe et al go on to teach a preferred method of production wherein the oligoester is blended with the hydroxyethyl acrylate, forming an intermediate and then reacted with diisocyanate (Col 5 lines 67-68; col 6 lines 1-7). Bristowe et al explain that the disclosed method allows for better control of the exothermic reaction and minimizes the formation of by-products without substantially affecting the nature of the resulting vinyl ester urethane (Col 6 lines 17-22). Therefore it would have been obvious to one of ordinary skill

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within the art at the time of invention to utilize the preferred method of Bristowe et al in McBain et al based on the motivation that both teach vinyl functional urethane esters having analogous backbone architecture, and the method of Bristowe et al allows for better control of reaction conditions and while producing an improved product.

Response to Arguments

5. Applicant's arguments, filed 6/14/2007, with respect to the rejection of claims 2 and 22-25 under 35 U.S.C. 112 2nd paragraph have been fully considered and are persuasive, the rejection has been withdrawn.

6. Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection. Applicants argue that the composition of claims 1-25 is not rendered obvious by McBain et al in view of Bristowe et al because McBain et al do not teach the combination of the hydroxyl-functional polyester and hydroxyl-functional acrylate prior to mixing with the diisocyanate, and one would not be motivated to utilize the teaching in Bristowe et al because it is drawn to aromatic polyesters.

7. Firstly, the present claims are only limited to a composition comprising the reaction product of (a), (b), and (c), wherein (a) and (c) are mixed prior to the inclusion of (b), and the resulting polymer has a backbone architecture of C-B-A-B-C. There is no limitation set forth in the present claims that the resulting polymers must exhibit a backbone architecture of C-B-C, therefore applicants' arguments are not commensurate in scope with the present claims.

Furthermore, in view of the new rejection of claims 1-25 under 103(a) as being unpatentable over McBain et al ('053) in view of Bristowe et al ('837) as necessitated by applicants' amendment, which renders obvious to combine the hydroxyl functional material prior to adding

the diisocyanate, one would reasonably expect reaction products consisting of both C-B-C as well as C-B-A-B-C.

8. Applicants also assert the claims have not been rendered obvious by McBain et al in view of Bristowe et al because although both disclose coating compositions comprising ester based urethane acrylates, Bristowe et al is not a relevant secondary teaching because it is directed towards aromatic not aliphatic esters and UV curing, which result in different reaction products. However, the determination that a reference is from a nonanalogous art is twofold. Firstly, it is decided if the reference is within the field of the inventor's endeavor, which in this case is ester based urethane acrylates having a specific backbone architecture. However, even if the first criterion is not satisfied then it must be determined whether the reference is reasonably pertinent to the particular problem with which the inventor was involved. *In re Wood*, 202 USPQ 171, 174; *In re Clay*, 23 USPQ.2d 105.

9. While it is noted that Bristowe et al is drawn to aromatic hydroxyl-functional esters, patentees still teach identical backbone architecture to that of McBain et al and applicants' claims i.e. (C-B-A-B-C) (Col 2 lines 5-36). Furthermore, applicants assert that Bristowe et al is not a relevant teaching because aromatic diols exhibit different reaction characteristics relative to aliphatic diols, however applicants have not set forth evidence to support their allegation. While it is noted that the polyester of Bristowe et al contains aromatic groups, all the reactants that make up resulting urethane acrylate are all functional equivalents to the respective compounds of McBain et al. Therefore one would reasonably expect them to exhibit similar behavior during the urethane reaction (Col 2 lines 5-36). Similarly, while Bristowe et al is drawn to UV curing, the terminal vinyl groups on urethane are functional equivalents to those of McBain et al, and

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one would reasonably expect them to exhibit identical curing characteristics; this position is exemplified by the fact that Bristowe et al on column 7 lines 14-20 teach that in addition to UV radiation, heat is a viable option for curing the coating composition.

10. Finally, regarding the second criterion for determining whether a reference is from a nonanalogous art, aforementioned Bristowe et al explain that by mixing said polyester and said acrylate together prior to the inclusion of diisocyanate, the resulting urethane reaction can be better controlled and the formation of unwanted bi-products reduced without substantially affecting the nature of the resulting vinyl ester urethane, which on the fact of it is a pertinent teaching.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

12. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin J. Gillespie whose telephone number is 571-272-2472.

The examiner can normally be reached on 8am-5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

B. Gillespie


RABON SERGENT
PRIMARY EXAMINER